

**Green highlights indicate ready-to-progress criteria*



Peters Hill Primary School
Subject Leader – H Owen, R Hawkins, A Marsh

Intent Statement

We want all children to understand and demonstrate our underlying principles of [Ambition](#), [Belief](#), [Compassion](#), [Pride and Respect](#). We want our curriculum to enable children to become [successful](#), [confident](#), [motivated and responsible](#) individuals with a [wealth of knowledge](#) about the world around them. We want all children to develop their full potential in a structured, caring and purposeful learning environment. We want all children to understand the connections that exist between new learning and existing knowledge through an awareness of carefully chosen pathways.

At Peters Hill Primary School the curriculum is designed to:

- Recognise all pupils as individuals and encourage positive self-worth and self-esteem.
- Promote curiosity, enthusiasm and engagement through a range of topics and themes.
- Encourage resilience and confidence to face challenges and tackle problems.
- Foster logical, creative and deep thinking to solve challenges and problems.
- Develop Independence and promote responsibility for learning.
- Nurture respect for others and value differences within our school community.
- Grow an awareness of civic responsibility and global citizenship.
- Develop a strong awareness of prior learning and the links that exist to new knowledge.
- Develop new learning and understand the impact on ourselves, the school and the wider community.

Our Maths Curriculum Pathways are:

Pathway 1 – Number: Place Value Pathway 2 - Number: Addition and Subtraction Pathway 3 – Number: Multiplication and Division Pathway 4 – Number: Fractions
Pathway 5 - Measurement: Length and Height, Weight and Volume, Money Pathway 6: Time Pathway 7: Geometry: Shape, Position and Direction Pathway 8: Statistics
Pathway 9: Decimals and Percentages Pathway 10: Ratio and Proportion Pathway 11: Algebra

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| Pathway 1 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|--|---|---|---|---|--|---|
| Number: Place Value Counting Represent Use PV and Compare Problems and Rounding | <ul style="list-style-type: none"> Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. (See RTPC 1NPV-1) Count, read and write numbers to 100 in numerals | <ul style="list-style-type: none"> Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward | <ul style="list-style-type: none"> Count from 0 in multiples of 4, 8, 50 and 100 Find 10 or 100 more or less than a given number. Reason about the location of any three digit number in the linear number system, including identifying the previous and next multiple of 100 and 10. (See RTPC 3NPV-3) | <ul style="list-style-type: none"> Count in multiples of 6, 7, 9, 25 and 1000 Count backwards through zero to include negative numbers | <ul style="list-style-type: none"> Count forwards or backwards in steps of powers of 10 for any given number up to 1000000 | |
| | <ul style="list-style-type: none"> Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than, most, least Read and write numbers from 1 to 20 in numerals and words | <ul style="list-style-type: none"> Read and write numbers to at least 100 in numerals and in words Identify, represent and estimate numbers using different representations including the number line | <ul style="list-style-type: none"> Identify, represent and estimate numbers using different Representations Read and write numbers up to 1000 in numerals and in words | <ul style="list-style-type: none"> Identify, represent and estimate numbers using different representations Read Roman numerals to 100 (I to C) and know that over time the numeral system changed to include the concept of zero and place value | <ul style="list-style-type: none"> Read, write, order and compare numbers to at least 1000000 and determine the value of each digit Read Roman numerals to 1000 (M) and recognise years written in Roman numerals Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts. (See RTPC 5NPV-4) | <ul style="list-style-type: none"> Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and nonstandard partitioning (See RTPC 6NPV-2) |
| | <ul style="list-style-type: none"> Given a number, identify one more and one less | <ul style="list-style-type: none"> Recognise the place value of each digit in a two digit number (tens, ones) and compose and decompose two-digit numbers using standard and nonstandard partitioning. (See RTPC 2NPV-1) Compare and order numbers from 0 up to 100; use <, > and = signs | <ul style="list-style-type: none"> Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three digit multiples of 10. (See RTPC 3NPV-1) Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) and compose and decompose three-digit numbers using standard and nonstandard partitioning. (See RTPC 3NPV-2) Compare and order numbers up to 1000 | <ul style="list-style-type: none"> Find 1000 more or less than a given number. (See RTPC 4NPV-3) Recognise the place value of each digit in a four digit number (thousands, hundreds, tens and ones) and compose and decompose four-digit numbers using standard and nonstandard partitioning. (See RTPC 4NPV-2) Order and compare numbers beyond 1000 Reason about the location of any four digit number in the linear number system. (See RTPC 4NPV-3) | <ul style="list-style-type: none"> Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01. (See RTPC 5NPV-1) Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and nonstandard partitioning. (See RTPC 5NPV-2) | <ul style="list-style-type: none"> Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000). (See RTPC 6NPV-1) Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts. See RTPC 6NPV-4 |
| | <ul style="list-style-type: none"> Reason about the location of numbers to 20 within the linear number system, including comparing using < > and = (See RTPC 1NPV-2) | <ul style="list-style-type: none"> Use place value and number facts to solve problems Reason about the location of any two digit number in the linear number system, including identifying the previous and next multiple of 10. (See RTPC 2NPV-2) | <ul style="list-style-type: none"> Solve number problems and practical problems involving these ideas Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts. (See RTPC 3NPV-4) | <ul style="list-style-type: none"> Round any number to the nearest 10, 100 or 1000. (See RTPC 4NPV-3) Solve number and practical problems that involve all of the above and with increasingly large positive numbers | <ul style="list-style-type: none"> Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero | <ul style="list-style-type: none"> Round any whole number to a required degree of accuracy. Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, |

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**Number:
Place Value**

**Problems
and
Rounding**

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| | | | <ul style="list-style-type: none"> • Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100. (See RTPC 4NPV-1) • Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts. (See RTPC 4NPV-4) | <ul style="list-style-type: none"> • Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000 • Solve number problems and practical problems that involve all of the above | <p>including in contexts. (See RTPC 6NPV-3)</p> <ul style="list-style-type: none"> • Use negative numbers in context, and calculate intervals across zero • Solve number and practical problems that involve all of the above |
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| Pathway 2 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---|---|--|---|--|---|--|
| <p>Number: Addition and Subtraction</p> <p>Recall, Represent, Use</p> | <ul style="list-style-type: none"> Represent and use number bonds and related subtraction facts within 20. <i>Develop fluency in addition and subtraction facts within 10. (See RTPC 1NF-1)</i> Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers. <i>(See RTPC 1AS-1)</i> Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs, and relate additive expressions and equations to real-life contexts. <i>(See RTPC 1AS-2)</i> | <ul style="list-style-type: none"> Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. <i>Secure fluency in addition and subtraction facts within 10, through continued practice. (See RTPC 2NF-1)</i> Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. Show that the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot | <ul style="list-style-type: none"> Estimate the answer to a calculation and use inverse operations to check answers | <ul style="list-style-type: none"> Estimate and use inverse operations to check answers to a calculation | <ul style="list-style-type: none"> Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy | |
| <p>Calculations</p> | <ul style="list-style-type: none"> Add and subtract one-digit and two-digit numbers to 20, including zero | <ul style="list-style-type: none"> Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers. <i>Add and subtract across 10 (See RTPC 2AS-1)</i> <i>Add and subtract within 100 by</i> | <ul style="list-style-type: none"> Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three digit number and hundreds. <i>Secure fluency in addition and subtraction facts that bridge 10, through continued practice. (See RTPC 3NF-1)</i> <i>Calculate complements to 100. (See RTPC 3AS-1)</i> <i>Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction (See RTPC 3AS-2)</i> | <ul style="list-style-type: none"> Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate | <ul style="list-style-type: none"> Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) Add and subtract numbers mentally with increasingly large numbers | <ul style="list-style-type: none"> Perform mental calculations, including with mixed operations and large numbers Use their knowledge of the order of operations to carry out calculations involving the four operations |

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Number:
Addition and
Subtraction

Calculations

Solve
Problems

applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two digit number. Add and subtract any 2 two digit numbers. (See RTPC 2AS-3 and 2AS-4)

- Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more...?" (See RTPC 2AS-)

- Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$

- Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods.

- Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction
- Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10). (See RTPC 3NF-3)
- Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part-part-whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction. (See RTPC 3AS-3)

- Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why

- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
- Solve problems involving addition and subtraction, multiplication and division and a combination of these, including understanding the use of the equals sign

- Solve problems involving addition, subtraction, multiplication and division
- Use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy
- Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number) See RTPC 6AS/MD-1
- Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding. (See RTPC 6AS/MD-2)
- Solve addition and subtraction multi steps problems in contexts, deciding which operations and methods to use and why

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| Pathway 3 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| <p>Number: Multiplication and division</p> <p>Recall, Represent, Use</p> <p>Calculations</p> | <ul style="list-style-type: none"> Count in multiples of twos, fives and tens. Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers. (See RTPC 1NF-2) | <ul style="list-style-type: none"> Recall and use multiplication and division facts for the 2, 5, and 10 times tables, including recognising odd and even numbers. Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables. (See RTPC 2MD-1) Show that the multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs | <ul style="list-style-type: none"> Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number. (See RTPC 3NF-2) Write and calculate mathematical statements for multiplication and division using the multiplication tables they know, including for two digit numbers times one-digit numbers, using mental and progressing to formal written methods | <ul style="list-style-type: none"> Recall and use multiplication and division facts for multiplication tables up to 12×12 and recognise products in multiplication tables as multiples of the corresponding number. (See RTPC 4NF-1) Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers Recognise and use factor pairs and commutativity in mental calculations. Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication. (See RTPC 4MD-2) Multiply two digit and three digit numbers by a one digit number using formal written layout Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100). (See RTPC 4NF-3) Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size. (See RTPC 4MD-1) | <ul style="list-style-type: none"> Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors (See RTPC 5MD-2) Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers Establish whether a number up to 100 is prime and recall prime numbers up to 19 Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) Multiply and divide numbers mentally drawing upon known facts. Secure fluency in multiplication table facts, and corresponding division facts, through continued practice. (See RTPC 5NF-1) Multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for 2 digit numbers (See RTPC 5MD-3) Divide numbers up to 4 digits by a one digit number using the formal written method of short division and interpret remainders appropriately for the context See RTPC 5MD-4) | <ul style="list-style-type: none"> Identify common factors, common multiples and prime numbers Use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy Multiply multi-digit number up to 4 digits by a 2-digit number using the formal written method of long multiplication Divide numbers up to 4 digits by a 2-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding as appropriate for the context Divide numbers up to 4 digits by a 2-digit number using the formal written method of short division, interpreting remainders according to the context |

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Number: Multiplication and division

Solve Problems

Combined Operations

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| <ul style="list-style-type: none"> Solve one step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher | <ul style="list-style-type: none"> Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotative division) (See RTPC 2MD-2) | <ul style="list-style-type: none"> Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objectives Apply known multiplication and division facts to solve contextual problems with different structures, including quotative and partitive division. (See RTPC 3MD-1) Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10) . (See RTPC 3NF-3) | <ul style="list-style-type: none"> Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. Understand and apply the distributive property of multiplication. . (See RTPC 4MD-3) Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context. (See RTPC 4NF-2) | <ul style="list-style-type: none"> Multiply and divide numbers by 10, 100 and 1000; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size (See RTPC 5MD-1) Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes, scaling by simple fractions and problem solving involving simple rates Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth). (See RTPC 5NF-2) Solve problems involving addition and subtraction, multiplication and division and a combination of these, including understanding the use of the equals sign | <ul style="list-style-type: none"> Perform mental calculations, including with mixed operations and large numbers Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding. (See RTPC 6AS/MD-2) Solve problems involving addition, subtraction, multiplication and division Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number. (See RTPC 6AS/MD-1) Use their knowledge of the order of operations to carry out calculations involving the four operations |
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| Pathway 4 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| Number: Fractions Recognise and Write | <ul style="list-style-type: none"> Recognise, find and name a half as one of two equal parts of an object, shape or quantity Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity | <ul style="list-style-type: none"> Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity | <ul style="list-style-type: none"> Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers of quantities by 10 Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts. (See RTPC 3F-1) | <ul style="list-style-type: none"> Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten | <ul style="list-style-type: none"> Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths and understand that they have the same value and the same position in the linear number system. (See RTPC 5F-2) Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number [for example - $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$] Read and write decimal numbers as fractions [for example $0.71 = \frac{71}{100}$] | |
| Compare | | <ul style="list-style-type: none"> Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ | <ul style="list-style-type: none"> Recognise and show, using diagrams, equivalent fractions with small denominators Compare and order unit fractions, and fractions with the same denominators | <ul style="list-style-type: none"> Recognise and show, using diagrams, families of common equivalent fractions | <ul style="list-style-type: none"> Compare and order fractions whose denominators are multiples of the same number | <ul style="list-style-type: none"> Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. (See RTPC 6F-1) Compare and order fractions, including fractions >1. Express fractions in a common denomination and use this to compare fractions that are similar in value. (See RTPC 6F-2) Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy(See RTPC 6F-3) Generate and describe linear number sequences (with fractions) |
| Calculations | | <ul style="list-style-type: none"> Write simple fractions for example, $\frac{1}{2}$ of $6 = 3$ | <ul style="list-style-type: none"> Add and subtract fractions with the same denominator within one whole (for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$) (See RTPC 3F-4) | <ul style="list-style-type: none"> Add and subtract fractions with the same denominator, including improper and mixed fractions and bridging whole numbers. (See RTPC 4F-3) Convert mixed numbers to improper fractions and | <ul style="list-style-type: none"> Add and subtract fractions with the same denominator and denominators that are multiples of the same number Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams Find non-unit fractions of quantities. (See RTPC 5F-1) | <ul style="list-style-type: none"> Add and subtract fractions with different denominations and mixed numbers, using the concept of equivalent fractions Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$] Divide proper fractions by whole numbers [for example $\frac{1}{3} \div 2 = \frac{1}{6}$] |

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| <p>Number: Fractions</p> <p>Solve Problems</p> | | | <ul style="list-style-type: none"> Solve problems that involve all of the above Find unit fractions of quantities using known division facts (multiplication tables fluency). (See RTPC 3F-2) Reason about the location of any fraction within 1 in the linear number system. (See RTPC 3F-3) | <p>vice versa). (See RTPC 4F-2)</p> <ul style="list-style-type: none"> Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number Reason about the location of mixed numbers in the linear number system). (See RTPC 4F-1) | <ul style="list-style-type: none"> Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates | <ul style="list-style-type: none"> Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example 38] Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts |
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| Pathway 5 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|-------------------------|---|---|--|---|--|---|
| Measurement: | <ul style="list-style-type: none"> Compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter, tall/short, double/half) Compare, describe and solve practical problems for: mass/weight [for example, heavy/light, heavier than, lighter than]; capacity and volume [for example full/ empty, more than, less than, half, half full, quarter] Measure and begin to record the following: Lengths and heights, mass and weight, capacity and volume | <ul style="list-style-type: none"> Choose and use appropriate standard units to estimate and measure length/ height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels Compare and order lengths, mass, volume/capacity and record the results using >, < and = | <ul style="list-style-type: none"> Measure, compare, add and subtract: lengths (m/cm/mm) ; mass (kg/g) volume/capacity (l/ml) | <ul style="list-style-type: none"> Convert between different units of measure [for example, kilometre to metre] | <ul style="list-style-type: none"> Convert between different units of metric measure [for example, km and m; cm and m; cm and mm; g and kg; l and ml] Convert between units of measure, including using common decimals and fractions. See RTPC 5NPV-5 Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints Estimate volume [for example using 1cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water] | <ul style="list-style-type: none"> Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3dp Convert between miles and kilometres Calculate, estimate and compare volume of cubes and cuboids using standard units, including cm³, m³ and extending to other units (mm³, km³) |
| Length and height | | | | | | |
| Weight and volume | | | | | | |
| Perimeter, Area, Volume | | | <ul style="list-style-type: none"> Measure the perimeter of simple 2D shapes | <ul style="list-style-type: none"> Find the area of rectilinear shapes by counting squares Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres | <ul style="list-style-type: none"> Measure and calculate the perimeter of composite rectilinear shapes in cm and m Calculate and compare the area of rectangles (including squares), and including using standard units, cm², m² estimate the area of irregular shapes. (See RTPC 5G-2) | <ul style="list-style-type: none"> Recognise that shapes with the same areas can have different perimeters and vice versa Recognise when it is possible to use formulae for area and volume of shapes Calculate the area of parallelograms and triangles |
| Money | <ul style="list-style-type: none"> Recognise and know the value of different denominations of coins and notes | <ul style="list-style-type: none"> Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value Find different combinations of coins that equal the same amounts of money Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change | <ul style="list-style-type: none"> Add and subtract amounts of money to give change, using both £ and p in practical contexts | <ul style="list-style-type: none"> Estimate, compare and calculate different measures, including money in pounds and pence Solve simple measure and money problems involving fractions and decimals to two decimal places | <ul style="list-style-type: none"> Use all four operations to solve problems involving measure) e.g. length, mass, volume, money) using decimal notation, including scaling | |

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| Pathway 6 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|-------------|--|--|--|---|---|---|
| Time | <ul style="list-style-type: none"> Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] Recognise and use language relating to dates, including days of the week, weeks, months and years Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times Compare, describe and solve practical problems for time [for example, quicker, slower, earlier, later] Measure and begin to record time (hours, minutes, seconds) | <ul style="list-style-type: none"> Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times Know the number of minutes in an hour and the number of hours in a day Compare and sequence intervals of time | <ul style="list-style-type: none"> Tell and write the time from an analogue clock, including using Roman numerals from I to XII and 12-hour and 24-hour clocks Estimate and read time with increasing accuracy to the nearest minute Record and compare time in terms of seconds, minutes and hours Use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight Know the number of seconds in a minute and the number of days in each month, year and leap year Compare durations of events [for example to calculate the time taken by particular events or tasks] | <ul style="list-style-type: none"> <u>Convert between different units of measure</u> [for example, kilometre to metre; <u>hour to minute</u>] Read, write and convert time between analogue and digital 12 and 24 hour clocks. Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days | <ul style="list-style-type: none"> Solve problems involving converting between units of time | <p>Use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa</p> |

*Green highlights indicate ready-to-progress criteria

| Pathway 7 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---|---|---|---|---|---|--|
| Geometry: 2-D and 3-D Shapes | <ul style="list-style-type: none"> Recognise and name common 2-D shapes, including: (for example, rectangles (including squares), circles and triangles) Recognise and name common 3-D shapes, including: (for example, cuboids (including cubes), pyramids and spheres.) Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another. (See RTPC 1G-1) Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations. (See RTPC 1G-2) | <ul style="list-style-type: none"> Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces Compare and sort common 2-D and 3-D shapes and everyday objects. Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties. (See RTPC 2G-1) | <ul style="list-style-type: none"> Draw 2-D shapes and make 3-D shapes using modelling materials. Draw polygons by joining marked points, and identify parallel and perpendicular sides. (See RTPC 3G-2) Recognise 3-D shapes in different orientations and describe them | <ul style="list-style-type: none"> Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons. (See RTPC 4G-2) | <ul style="list-style-type: none"> Identify 3D shapes, including cubes and other cuboids, from 2D representations Use the properties of rectangles to deduce related facts and find missing lengths and angles Distinguish between regular and irregular polygons based on reasoning about equal sides and angles | <ul style="list-style-type: none"> Draw 2-D shapes using given dimensions and angles. Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems (See RTPC 6G-1) Compare and classify geometric shapes based on their properties and sizes Recognise, describe and build simple 3D shapes, including making nets Illustrate and name parts of a circles, including radius, diameter and circumference and know that the diameter is twice the radius |
| Angles and Lines | | | <ul style="list-style-type: none"> Recognise angles as a property of shape or a description of a turn. and identify right angles in 2D shapes presented in different orientations. (See RTPC 3G-1) Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle Identify horizontal and vertical lines and pairs of perpendicular and parallel lines | <ul style="list-style-type: none"> Identify acute and obtuse angles and compare and order angles up to two right angles by size Identify lines of symmetry in 2-D shapes presented in different orientations (See RTPC 4G-3) Complete a simple symmetric figure with respect to a specific line of symmetry (See RTPC 4G-3) | <ul style="list-style-type: none"> Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles (See RTPC 5G-1) Draw given angles, and measure them in degrees (a) (See RTPC 5G-1) Identify: angles at a point and one whole turn (total 360o), angles at a point on a straight line and ½ a turn (total 180o) other multiples of 90o | <ul style="list-style-type: none"> Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles Find unknown angles in any triangles, quadrilaterals and regular polygons |
| Position and direction | <ul style="list-style-type: none"> Describe position, direction and movement, including whole, half, quarter and three quarter turns | <ul style="list-style-type: none"> Use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise) Order and arrange combinations of mathematical objects in patterns and sequences | | <ul style="list-style-type: none"> Describe positions on a 2-D grid as coordinates in the first quadrant Plot specified points and draw sides to complete a given polygon Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant. (See RTPC 4G-1) Describe movements between positions as translations of a given unit to the left/ right and up/ down | <ul style="list-style-type: none"> Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed. | <ul style="list-style-type: none"> Describe positions on the full coordinate grid (all four quadrants). Draw and translate simple shapes on the coordinate plane, and reflect them in the axes |

**Green highlights indicate ready-to-progress criteria*

| Pathway 8 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|-----------|--------|--------|--------|--------|--------|--------|
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**Green highlights indicate ready-to-progress criteria*

| | | | | | | |
|---|---|---|--|---|--|--|
| <p>Statistics</p> <p>Present and Interpret</p> <p>Solve Problems</p> | <ul style="list-style-type: none"> • | <ul style="list-style-type: none"> • Interpret and construct simple pictograms, tally charts, block diagrams and simple tables • Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity • Ask and answer questions about totalling and comparing categorical data | <ul style="list-style-type: none"> • Interpret and present data using bar charts, pictograms and tables • Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables | <ul style="list-style-type: none"> • Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. • Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs | <ul style="list-style-type: none"> • Complete, read and interpret information in tables including timetables • Solve comparison, sum and difference problems using information presented in a line graph | <ul style="list-style-type: none"> • Interpret and construct pie charts and line graphs and use these to solve problems • Calculate the mean as an average |
|---|---|---|--|---|--|--|

*Green highlights indicate ready-to-progress criteria

| Pathway 9 | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---------------------------|--|--------|--------|--------|--|--|--|
| Decimals | | | | | | | |
| Recognise and Write | | | | | <ul style="list-style-type: none"> Recognise and write decimal equivalents of any number of tenths or hundredths as well as $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ | <ul style="list-style-type: none"> Read and write decimal numbers as fractions (e.g. $0.71 = \frac{71}{100}$) Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents | <ul style="list-style-type: none"> Identify the value of each digit in numbers given to 3 decimal places and multiply numbers by 10, 100 and 1,000 giving answers up to 3 decimal places |
| Compare | | | | | <ul style="list-style-type: none"> Compare numbers with the same number of decimal places up to two decimal places Round decimals with one decimal place to the nearest whole number | <ul style="list-style-type: none"> Round decimals with two decimal places to the nearest whole number and to one decimal place Read, write, order and compare numbers with up to three decimal places. Reason about the location of any number with up to 2 decimal places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each. (See RTPC SNPV-3) Recall decimal fraction equivalents for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{10}$, , and , and for multiples of these proper fractions (See RTPC 5F-3) | |
| Calculations and Problems | | | | | <ul style="list-style-type: none"> Find the effect of dividing a one or two digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths | <ul style="list-style-type: none"> Solve problems involving number up to three decimal places Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling | <ul style="list-style-type: none"> Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$) Multiply one-digit numbers with up to 2 decimal places by whole numbers Use written division methods in cases where the answer has up to 2 decimal places Solve problems which require answers to be rounded to specified degrees of accuracy |

**Green highlights indicate ready-to-progress criteria*

Percentages

- Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal
- Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.
- Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison
- Recall and use equivalences between simple fractions, decimals and percentages including in different contexts

*Green highlights indicate ready-to-progress criteria

| Pathway 10 | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|----------------------|--|--------|--------|--------|--------|--------|--|
| Ratio and Proportion | | • | • | • | • | • | <ul style="list-style-type: none"> Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts Solve problems involving ratio relationships. (See RTPC 6AS/MD-3) Solve problems involving similar shapes where the scale factor is known or can be found Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples |

*Green highlights indicate ready-to-progress criteria

| Pathway 11 | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|--|--|---|---|--|--|--|---|
| Algebra <i>*NOTE: Although algebraic notation is not introduced until Y6, algebraic thinking starts much earlier as exemplified by the missing number objectives from Y1/2/3</i> | | <ul style="list-style-type: none"> Solve one-step problems that involve addition and subtraction using concrete objects and pictorial representations, and missing numbers problems such as $7 = ? - 9$ | <ul style="list-style-type: none"> Recognise and use the inverse relationship between addition and subtraction and use to check calculations and solve missing number problems | <ul style="list-style-type: none"> Solve problems including missing number problems | <ul style="list-style-type: none"> | <ul style="list-style-type: none"> | <ul style="list-style-type: none"> Use simple formulae Generate and describe linear number sequences Express missing number problems algebraically Find pairs of numbers that satisfy an equation with two unknowns. Solve problems with 2 unknowns. (See RTPC 6AS/MD-4) Enumerate possibilities of combinations of two variables |